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Nanotechnology boom could center in Bay Area
Industry, government team up on revolutionary science

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Washington -- Silicon Valley Rep. Mike Honda's $2.4 billion legislation calling for intensified federal research and spending into nanotechnology, the revolutionary science that Bay Area leaders hope could become a local economic foundation of the future, sailed through the House Wednesday.

Nanotechnology, the science of building materials atom by atom, could yield new products in a host of areas -- cheaper and more efficient electricity and nonpolluting energy sources, new medical diagnostic tools and treatments and stronger and cheaper materials for buildings, clothing and space vehicles as well as making today's tiny microchips seem hopelessly slow and dorky.

In its earliest appearances, the technology in which scientists manipulate materials as small as a nanometer -- a billionth of a meter wide -- has been employed in stain-resistant and wrinkle-free pants and sunscreens that block ultraviolet-light.

"The federal government is one of the few investors that can take the long-term view," said Honda, a San Jose Democrat and House Science Committee member who co-sponsored the bill with Rep. Sherwood Boehlert, R-N.Y., the panel's chairman.

Honda sees support of the new technology as vital to Silicon Valley's future economic health. He and other sponsors say federal backing is needed to make sure the United States stays competitive with foreign countries that are also spending more on nanotechnology research and development.

The Bay Area is already organizing to turn the region into a nanotechnology powerhouse and stay ahead of competitors elsewhere in the country such as New York state, which has set up a $1 billion nanotech program.

Companies ranging from small firms including Nanosys of Palo Alto and San Francisco's Angstrovision Inc. to international giants such as ChevronTexaco already are developing products. Stanford University, UC Berkeley and its Lawrence Berkeley National Laboratory, UCSF and NASA's Ames Research Center are active in the field.

The San Francisco Council for Economic Development, part of the city's Chamber of Commerce, has sponsored seminars on fostering the new technology sector. The chamber is home to the Bay Area Nanotech Initiative, which is coordinating local efforts and helping entrepreneurs link up with venture capital firms. The initiative is also looking to the state for more help.

"We are the world leader in terms of nanotech research," said Roberta Achtenberg, senior vice president of the San Francisco chamber. "We need to make sure San Francisco and

Silicon Valley work together. We haven't always done that, but both regions are suffering mightily economically and we need to cooperate."

According to Jim Hurd of the Nanoscience Exchange, a Bay Area group, the legislation approved overwhelmingly by the House is important because the United States faces a host of global competitors.

"Other countries are extremely aggressive in pushing government-business nano ventures," Hurd said. "In Asia, they know whoever wins will get to control the manufacturing of the future."

But Hurd warned that California isn't pushing hard enough.

"California is saying there's no money for anything, but the fact is there will be an effect on the state's economy by not focusing on this issue and not moving on it, and we're already starting to see it," Hurd said.

"It's not a perfect bill, but it establishes a foundation out of which more can happen," he added.

Currently, 13 federal agencies are involved in nanotechnology research. The bipartisan bill, which passed the House 405-19, would create an interagency committee and a national nanotechnology office to focus federally backed education, research and development. It would provide grants for the next three years and create an outside advisory committee, made up of members from academia and industry, and establish inter-disciplinary research centers.

The House adopted a compromise amendment offered by Rep. Eddie Bernice Johnson, D-Texas, that called for giving nanotechnology research bodies the right to create citizens' advisory committees, while not requiring it. Johnson said such committees would be a good idea now, rather than waiting for now-unforeseen problems to emerge later, as happened with public fears that arose out of such technologies as genetically modified food or nuclear power.

The three-year federal effort outlined in Honda's bill is designed to foster what the National Science Foundation envisions as a $1 trillion global market within a decade.

The Bush administration supports the legislation, which builds on an initiative started under then-President Bill Clinton, and the Senate is considering a similar bill that is expected to pass soon.

"A small investment in a small technology will lead to big payoffs," said Rep. Rush Holt, D-N.J.